Fuel 4 Women

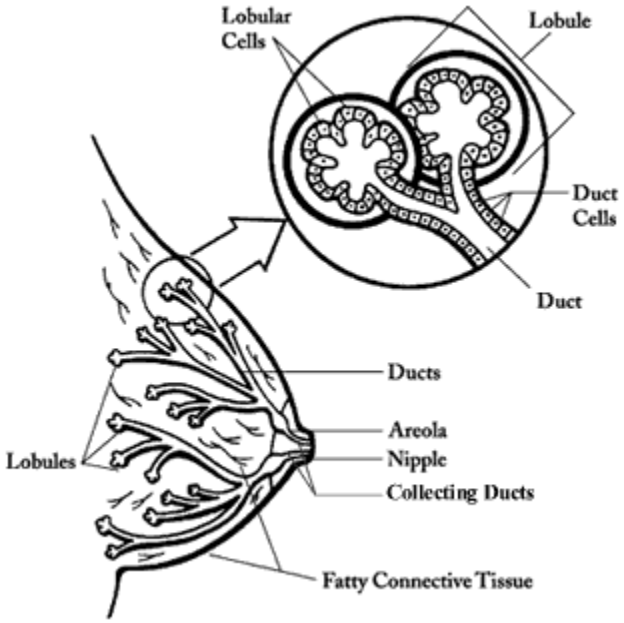
KSC/CCAFS HEALTH EDUCATION AND WELLNESS PROGRAM

Breast Cancer Awareness
October 2005

WHAT IS BREAST CANCER?

Breast cancer is a malignant (cancerous) tumor that starts from cells of the breast. The disease occurs mostly in women, but men can get breast cancer as well. The information here refers only to breast cancer in women.

A woman's breast is made up of glands that make breast milk (lobules), ducts (small tubes that connect lobules to the nipple), fatty and connective tissue, blood vessels, and lymph (pronounced *limf*) vessels. Most breast cancers begin in the ducts (*ductal carcinoma*), some begin in the lobules (*lobular carcinoma*), and the rest in other tissues.



Lymph vessels are like veins, except that they carry lymph fluid instead of blood. Lymph is a clear fluid that contains immune system cells and waste products. Lymph vessels lead to small, bean-shaped collections of tissue called lymph nodes. Most lymph vessels of the breast lead to lymph nodes under the arm. These are called axillary (AX-uh-lair-ee) nodes.

If breast cancer cells reach the underarm lymph nodes and continue to grow, they cause the nodes to swell. Once cancer cells have reached these nodes they are more likely to spread to other organs of the body as well.

RISKS

Gender: simply being a woman is the main risk for breast cancer. While men can also get the disease, it is about 100 times more common in women than in men.

Age: The chance of getting breast cancer goes up as a woman gets older. Nearly 8 out of 10 breast cancers are found in women over age 50.

Genetic risk factors: About 5% to 10% of breast cancers are linked to changes (mutations) in certain genes. The most common gene changes are those of the BRCA1 and BRCA2 genes. Women with these gene changes have up to an 80% chance of getting breast cancer during their lifetimes. Other gene changes may raise breast cancer risk as well.

Family history: Breast cancer risk is higher among women whose close blood relatives have this disease. The relatives can be from either the mother's or father's side of the family. Having a mother, sister, or daughter with breast cancer about doubles a woman's risk.

Personal history of breast cancer: A woman with cancer in one breast has a greater chance of getting a new cancer in the other breast or in another part of the same breast. This is different from the first cancer coming back (recurrence).

Race: White women are slightly more likely to get breast cancer than are African-American women. But African American women are more likely to die of this cancer. Many experts now believe that the main reason for this is because they have faster growing tumors. Asian, Hispanic, and American Indian women have a lower risk of getting breast cancer.

Earlier abnormal breast biopsy: Certain types of abnormal biopsy results can be linked to a slightly higher risk of breast cancer.

Earlier breast radiation: Women who have had radiation treatment to the chest area earlier in life have a greatly increased risk of breast cancer.

Menstrual periods: Women who began having periods early (before 12 years of age) or who went through the change of life (menopause) after the age of 55 have a slightly increased risk of breast cancer.

Treatment with DES: In the past, some pregnant women were given the drug DES (diethylstilbestrol) because it was thought to lower their chances of losing the baby. Recent studies have shown that these women have a slightly increased risk of getting breast cancer.

Breast Cancer Risks and Lifestyle

Not having children: Women who have had not had children, or who had their first child after age 30, have a slightly higher risk of breast cancer. Being pregnant more than once and at an early age reduces breast cancer risk.

Birth control pills: It is still not clear what part birth control pills might play in breast cancer risk. Studies have found that women now using birth control pills have a slightly greater risk of breast cancer. Women who stopped using the pill more than 10 years ago do not seem to have any increased risk. It's a good idea to discuss the risks and benefits of birth control pills with your doctor.

Hormone replacement therapy (HRT): It has become clear that long-term use (several years or more) of combined HRT (estrogens together with progesterone) after menopause increases the risk of breast cancer as well as the risk of heart disease, blood clots, and strokes. The breast cancers are also found at a more advanced stage, perhaps because HRT seems to reduce the effectiveness of mammograms. Five years after stopping HRT, the breast cancer risk appears to drop back to normal. Estrogen alone (ERT) does not seem to increase the risk of breast cancer as much, if at all.

At this time, there appear to be few strong reasons to use HRT, other than for short-term relief of menopausal symptoms. Because there are other factors to think about, you should talk with your doctor about the pros and cons of using HRT.

Breast-feeding and pregnancy: Some studies have shown that breast-feeding slightly lowers breast cancer risk, especially if the breast-feeding lasts 1½ to 2 years. This could be because breast-feeding lowers a woman's total number of menstrual periods, as does pregnancy. One study found that having more children and breast-feeding longer could reduce the risk of breast cancer by half.

Alcohol: Use of alcohol is clearly linked to a slightly increased risk of getting breast cancer. Women who have 1 drink a day have a very small increased risk. Those who have 2 to 5 drinks daily have about 1½ times the risk of women who drink no alcohol. The American Cancer Society (ACS) suggests limiting the amount you drink.

Diet: Being overweight is linked to a higher risk of breast cancer, especially for women after change of life and if the weight gain took place during adulthood. Also, the risk seems to be higher if the extra fat is in the waist area. But the link between weight and breast cancer risk is complex, and studies of fat in the diet as it relates to breast cancer risk have often given conflicting results.

Since diet and weight have been shown to affect the risk of getting several other types of cancer as well as heart disease, the ACS says it's best to stay at a

healthy weight and limit your use of red meats, especially those high in fat or processed.

Exercise: Studies show that exercise reduces breast cancer risk. The only question is how much exercise is needed. One study found that as little as 1 hour and 15 minutes to 2 1/2 hours per week of brisk walking reduced the risk by 18%. Walking 10 hours a week reduced the risk a little more.

QUICK FACTS

- About 211,240 women in the United States will be found to have invasive breast cancer in 2005
- About 40,410 women will die from the disease this year
- Right now there are slightly over 2 million women living in the United States who have been treated for breast cancer
- The chance of a woman having invasive breast cancer some time during her life is about 1 in 8
- The chance of dying from breast cancer is about 1 in 33

BREAST CANCER EARLY DETECTION

The ACS recommends the following guidelines for finding breast cancer early in women without symptoms:

Mammogram: Women age 40 and older should have a mammogram every year and should continue to do so for as long as they are in good health. While mammograms can miss some cancers, they are still a very good way to find breast cancer.

Clinical breast exam: Women in their 20s and 30s should have a clinical breast exam (CBE) as part of a regular exam by a health expert, preferably every 3 years. After age 40, women should have a breast exam by a health expert every year. It might be a good idea to have the CBE shortly before the mammogram. You can use the exam to learn what your own breasts feel like.

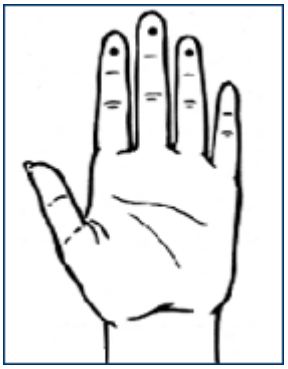
Breast awareness and breast self-exam (BSE): BSE is an option for women starting in their 20s. If you decide to do BSE, you should have your doctor or nurse check your method to make sure you are doing it right. If you do BSE on a regular basis, you get to know how your breasts normally feel. Then you can more easily notice changes. But it's OK not to do BSE or not to do it on a fixed schedule.

The most important thing is to see your doctor right away if you notice any of these changes: a lump or swelling, skin irritation or dimpling, nipple pain or the nipple turning inward, redness or scaliness of the nipple or breast skin, or a discharge other than breast milk. But remember that most of the time these breast changes are not cancer.

Women at high risk: Women with a higher risk of breast cancer should talk with their doctor about the best approach for them. This might mean starting mammograms when they are younger, having extra tests, or having more frequent exams.

How to Examine Your Breasts:

- Lie down and place your right arm behind your head.The exam is done while lying down, and not standing up, because when lying down the breast tissue spreads evenly over the chest wall and it is as thin as possible making it much easier to feel all the breast tissue.
- Use the finger pads of the 3 middle fingers on your left hand to feel for lumps in the right breast. Use overlapping dime-sized circular motions of the finger pads to feel the breast tissue.
- Use 3 different levels of pressure to feel all the breast tissue. Light pressure is needed to feel the tissue closest to the skin; medium pressure to feel a little deeper; and firm pressure to feel the tissue closest to the chest and ribs. A firm ridge in the lower curve of each breast is normal. If you're not sure how hard to press, talk with your doctor or nurse. Use each pressure level to feel the breast tissue before moving on to the next spot.



Move around the breast in an up and down pattern starting at an imaginary line drawn straight done your side from the underarm and moving across the breast to the middle of the chest bone.(sternum or breastbone).. Be sure to check the entire breast area going down until you feel only ribs and up to the neck or collar bone (clavicle).

There is some evidence to suggest that the up and down pattern (sometimes called the vertical pattern) is the most effective pattern for covering the entire breast and not missing any breast tissue.

Repeat the exam on your left breast, using the finger pads of the right hand. While standing in front of a mirror with your hands pressing firmly down on your hips, look at your breasts for any changes of size, shape, contour, or dimpling. (The pressing down on the hips position contracts the chest wall muscles and enhances any breast changes.)

Examine each underarm while sitting up or standing and with your arm only slightly raised so you can easily feel in this area. Raising your arm straight up tightens the tissue in this area and makes it very difficult to examine.

This procedure for doing breast self-exam represents changes in previous procedure recommendations. These changes represent an extensive review of the medical literature and input from an expert advisory group. There is evidence that the woman’s position (lying down), area felt, pattern of coverage of the breast, and use of different amounts of pressure increase the sensitivity of BSE as measured with silicon models, and for CBE using patient models with known small non cancerous lumps in their breasts.

SYMPTOMS

While the widespread use of screening mammography has increased the number of breast cancers found before they cause any symptoms, some are still missed.

The most common sign of breast cancer is a new lump or mass. A lump that is painless, hard, and has uneven edges is more likely to be cancer. But some cancers are tender, soft, and rounded. So it's important to have anything unusual checked by your doctor.

Other signs of breast cancer include the following:

- a swelling of part of the breast
- skin irritation or dimpling
- nipple pain or the nipple turning inward
- redness or scaliness of the nipple or breast skin
- a nipple discharge other than breast milk
- a lump in the underarm area

TREATMENT

The purpose of *local treatment* is to treat a tumor without affecting the rest of the body. Surgery and radiation are examples of local treatment.

Systemic treatment is given into the bloodstream or by mouth to reach cancer cells that may have spread beyond the breast. Chemotherapy, hormone therapy, and immunotherapy are systemic treatments.

Most women with breast cancer will have some type of surgery to treat the main breast tumor. The purpose of surgery is to remove as much of the cancer as possible. Surgery can also be done to find out whether the cancer has spread to the lymph nodes under the arm (axillary dissection), to restore the breast's appearance (reconstructive surgery), or to relieve symptoms of advanced cancer. Here is a summary of some of the most common types of breast cancer surgery:

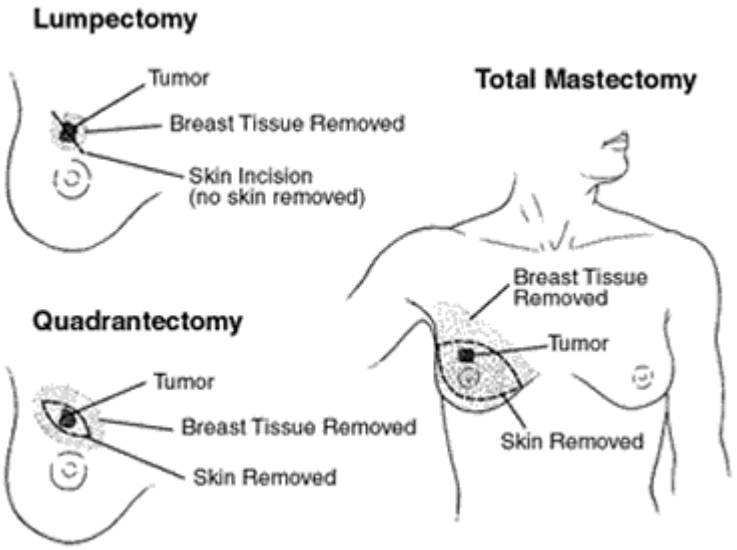
Lumpectomy (lump-EK-tuh-me): Also called breast conservation therapy, lumpectomy involves removing only the breast lump and some normal tissue around it. Radiation treatment is often given for about 6 weeks after this type of surgery. If chemotherapy is going to be used as well, the radiation may be postponed until the chemo is finished.

Partial (segmental) mastectomy (mas-TEK-tuh-me): This surgery involves removing more of the breast tissue than in a lumpectomy. It is usually followed by radiation therapy.

Simple or total mastectomy: In this surgery the entire breast is removed but not the lymph nodes under the arm or muscle tissue from beneath the breast.

Modified radical mastectomy: This operation involves removing the entire breast and some of the lymph nodes under the arm.

Radical mastectomy: This is extensive removal of entire breast, lymph nodes, and the chest wall muscles under the breast. This surgery is rarely done now because modified radical mastectomy has proven to be just as effective with less disfigurement and fewer side effects.



Chemotherapy

Chemotherapy is the use of anticancer drugs injected into a vein or taken as a pill. These drugs enter the bloodstream and reach throughout the body, making the treatment useful for cancers that have spread to distant organs. While these drugs kill cancer cells, they also damage some normal cells, which can lead to side effects.

Radiation Therapy

Radiation therapy is treatment with high-energy rays (such as x-rays) to kill or shrink cancer cells. The radiation may come from outside the body (external radiation) or from radioactive materials placed directly in the tumor.

Hormone Therapy

The female hormone estrogen promotes the growth of breast cancer cells in some women. For these women, several methods to block the effect of estrogen or to lower its levels are used to treat breast cancer.

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- *Educating woman about their health*
- *Encouraging woman to act against disease*

HTTP://HEWP.KSC.NASA.GOV

RESOURCES

American Cancer Society

www.cancer.org

For a listing of local mammogram screening facilities:

KSC/CCAFS Health Education and Wellness Program

http://hewp.ksc.nasa.gov

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